

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
18 January 2001 (18.01.2001)

PCT

(10) International Publication Number
WO 01/04661 A2

(51) International Patent Classification⁷: G01V

(21) International Application Number: PCT/GB00/02697

(22) International Filing Date: 13 July 2000 (13.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 9916350.3 14 July 1999 (14.07.1999) GB

(71) Applicant (for all designated States except CA, FR, NO, US): SCHLUMBERGER HOLDINGS LIMITED [—/—]; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola (VG).

(71) Applicant (for CA only): SCHLUMBERGER CANADA LIMITED [CA/CA]; 24th Floor, Monenco Place, 801 6th Avenue, S.W., Calgary, Alberta T2P 3W2 (CA).

(71) Applicant (for FR only): SERVICES PETROLIERS SCHLUMBERGER [FR/FR]; 42, rue Saint-Dominique, F-75007 Paris (FR).

(71) Applicant (for NO only): SCHLUMBERGER TECHNOLOGY B.V. [NL/NL]; Parkstraat 83-89, NL-2514 JG The Hague (NL).

(72) Inventors; and

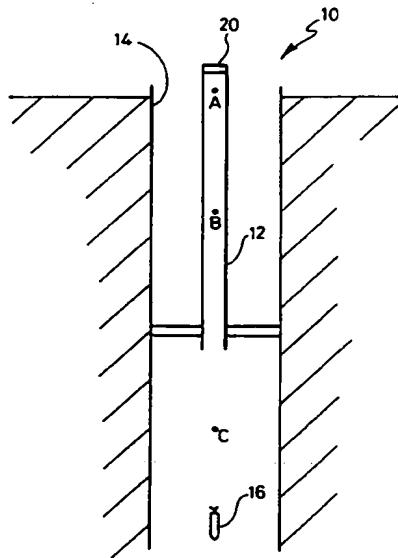
(75) Inventors/Applicants (for US only): SHEPPARD, Michael, Charles [GB/GB]; 6 Whitmore Way, Waterbeach, Cambridgeshire CB5 9HS (GB). ZIMMERMAN, Thomas, Harvey [US/US]; 15922 Clearcrest, Houston, TX 77059 (US).

(74) Agent: WANG, William, L.; Schlumberger Cambridge Research Limited, High Cross, Madingley Road, Cambridge CB3 0EL (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: DOWNHOLE SENSING APPARATUS WITH SEPARABLE ELEMENTS



WO 01/04661 A2

(57) Abstract: A sensing apparatus (16) is provided for use downhole, comprising a housing (22) and sensing means (52, 54, 56, 58) with the housing (22) containing a plurality of separable elements (64) to which data acquired by the sensing means (52, 54, 56, 58) is transferred. The separable elements (64) are releasable from the housing to convey the acquired data to surface. The separable elements have a spherical outer casing (72) of around 1 to 10 cm diameter which surrounds a memory chip (74). The casing (72) has a sealable aperture (76) so that electrical connection to the chip (74) can be established within the housing.